

ABSTRACT

An apparatus and method for analyzing an impurity on a gas is provided. The apparatus includes a first cell containing a first gas with the impurity and a second cell containing a second gas absent the impurity. A first light beam is coupled into the first cell and a second light beam is coupled into the second cell. A first detector is coupled to an output of the first cell and generates a first signal based on a decay rate of the first light beam within the first cell. A second detector is coupled to an output of the second cell and generates a second signal based on a second decay rate of the second light beam within the second cell. The concentration of the impurity is determined based on a difference between the first decay rate and the second decay rate.